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Cancer & COVID-19

Risk factors for Coronavirus Disease 2019 (COVID-19) severity and mortality among solid cancer patients and impact of the disease on anticancer treatment: A French nationwide cohort study (GCO-002 CACOVID-19)

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BACKGROUND

Cancer patients are thought to have an increased risk of developing severe Coronavirus Disease 2019 (COVID-19) infection and of dying from the disease. In this work, predictive factors for COVID-19 severity and mortality in cancer patients were investigated.

PATIENTS AND METHODS

In this large nationwide retro-prospective cohort study, we collected data on patients with solid tumours and COVID-19 diagnosed between March 1 and 11th June 2020. The primary end-point was all-cause mortality and COVID-19 severity, defined as admission to an intensive care unit (ICU) and/or mechanical ventilation and/or death, was one of the secondary end-points.

RESULTS

From 4 April to 11 June 2020, 1289 patients were analysed. The most frequent cancers were digestive and thoracic. Altogether, 424 (33%) patients had a severe form of COVID-19 and 370 (29%) patients died. In multivariate analysis, independent factors associated with death were male sex (odds ratio 1.73, 95%CI: 1.18–2.52), The Eastern Cooperative Oncology Group Performance Scale (ECOG PS) ≥ 2 (OR 3.23, 95%CI: 2.27–4.61), updated Charlson comorbidity index (OR 1.08, 95%CI: 1.01–1.16) and admission to ICU (OR 3.62, 95%CI 2.14–6.11). The same factors, age along with corticosteroids before COVID-19 diagnosis, and thoracic primary tumour site were independently associated with COVID-19 severity. None of the anticancer treatments administered within the previous three months had any effect on mortality or COVID-19 severity, except for cytotoxic chemotherapy in the subgroup of patients with detectable severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) by reverse transcriptase polymerase chain reaction (RT-PCR), which was associated with a slight increase of the risk of death (OR 1.53; 95%CI: 1.00–2.34; $p = 0.05$). A total of 431 (39%) patients had their systemic anticancer treatment (such as chemotherapy, targeted or immune therapy) interrupted or stopped following diagnosis of COVID-19.

CONCLUSIONS

Mortality and COVID-19 severity in cancer patients are high and are associated with general characteristics of patients. We found no deleterious effects of recent anticancer treatments, except for cytotoxic chemotherapy in the RT-PCR-confirmed subgroup of patients. In almost 40% of patients, the systemic anticancer therapy was interrupted or stopped after COVID-19 diagnosis.